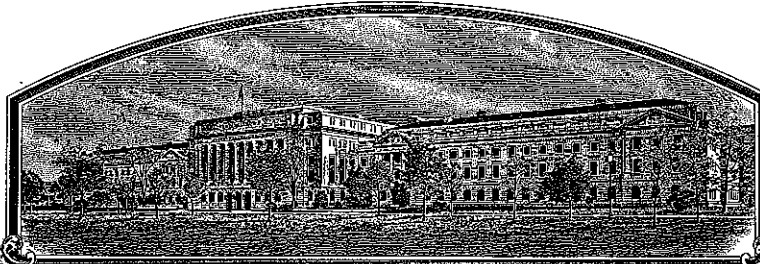


No.

200500339



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Colorado Wheat Research Foundation

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSE, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSE, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. IN THE UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBERS AND GENERATIONS SPECIFIED BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

WHEAT, COMMON

'Bond CL'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this fifth day of June, in the year two thousand and six.

Attest:

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Secretary of Agriculture



U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE
(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF OWNER <i>Colorado Wheat Research Foundation</i>		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME <i>C000D007</i>		3. VARIETY NAME <i>BOND CL</i>	
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country) <i>7100 South Clinton Street Suite 120 Centennial, CO 80112</i>		5. TELEPHONE (include area code) <i>303-721-3300</i>		FOR OFFICIAL USE ONLY PVPO NUMBER <i>200500339</i> FILING DATE <i>Sept. 2, 2005</i>	
		6. FAX (include area code) <i>303-721-7555</i>			
7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION (corporation, partnership, association, etc.) <i>Research Foundation</i>		8. IF INCORPORATED, GIVE STATE OF INCORPORATION			
9. DATE OF INCORPORATION		10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. (First person listed will receive all papers) <i>Scott D. Haley, Ph.D. Soil and Crop Sciences Dept. Colorado State University Fort Collins, CO 80523</i>		FILING AND EXAMINATION FEES: <i>\$ 3652.00</i> DATE <i>9/02/2005</i> CERTIFICATION FEE: <i>\$ 768.00</i> DATE <i>APRIL 4, 2006</i>	
11. TELEPHONE (include area code) <i>970-491-6483</i>		12. FAX (include area code) <i>970-491-0564</i>		13. E-MAIL <i>Scott.haley@colostate.edu</i>	
14. CROP KIND (Common Name) <i>Wheat, common</i>		16. FAMILY NAME (Botanical) <i>Gramineae</i>		18. DOES THE VARIETY CONTAIN ANY TRANSGENES? (OPTIONAL) <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF SO, PLEASE GIVE THE ASSIGNED USDA-APHIS REFERENCE NUMBER FOR THE APPROVED PETITION TO DEREGULATE THE GENETICALLY MODIFIED PLANT FOR COMMERCIALIZATION.	
15. GENUS AND SPECIES NAME OF CROP <i>Triticum aestivum</i>		17. IS THE VARIETY A FIRST GENERATION HYBRID? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED? (See Section 83(a) of the Plant Variety Protection Act) <input checked="" type="checkbox"/> YES (If "yes", answer items 21 and 22 below) <input type="checkbox"/> NO (If "no", go to item 23)	
19. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse)		21. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF CLASSES? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO IF YES, WHICH CLASSES? <input checked="" type="checkbox"/> FOUNDATION <input checked="" type="checkbox"/> REGISTERED <input checked="" type="checkbox"/> CERTIFIED		22. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO IF YES, SPECIFY THE NUMBER 1,2,3, etc. FOR EACH CLASS. <input checked="" type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input checked="" type="checkbox"/> CERTIFIED (If additional explanation is necessary, please use the space indicated on the reverse.)	
a. <input checked="" type="checkbox"/> Exhibit A. Origin and Breeding History of the Variety b. <input checked="" type="checkbox"/> Exhibit B. Statement of Distinctness c. <input checked="" type="checkbox"/> Exhibit C. Objective Description of Variety d. <input checked="" type="checkbox"/> Exhibit D. Additional Description of the Variety (Optional) e. <input checked="" type="checkbox"/> Exhibit E. Statement of the Basis of the Owner's Ownership f. <input checked="" type="checkbox"/> Voucher Sample (2,500 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository) g. <input checked="" type="checkbox"/> Filing and Examination Fee (\$3,652), made payable to "Treasurer of the United States" (Mail to the Plant Variety Protection Office)		23. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U. S. OR OTHER COUNTRIES? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. (Please use space indicated on reverse.)		24. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT (PLANT BREEDER'S RIGHT OR PATENT)? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO IF YES, PLEASE GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. (Please use space indicated on reverse.)	
25. The owners declare that a viable sample of basic seed of the variety has been furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.					
The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.					
Owner(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.					
SIGNATURE OF OWNER <i>Scott Haley</i>		SIGNATURE OF OWNER			
NAME (Please print or type) <i>Scott Haley</i>		NAME (Please print or type)			
CAPACITY OR TITLE <i>Professor</i>		DATE <i>8/26/05</i>		CAPACITY OR TITLE	
				DATE	

INSTRUCTIONS

200500339

GENERAL: To be effectively filed with the Plant Variety Protection Office (PVPO), **ALL** of the following items must be **received** in the PVPO: (1) Completed application form signed by the owner; (2) completed exhibits A, B, C, E; (3) for a seed reproduced variety at least 2,500 viable untreated seeds, for a hybrid variety at least 2,500 untreated seeds of each line necessary to **reproduce** the variety, or for tuber reproduced varieties verification that a viable (*in the sense that it will reproduce an entire plant*) tissue culture will be deposited and maintained in an approved public repository; (4) check drawn on a U.S. bank for \$3,652 (\$432 filing fee and \$3,220 examination fee), payable to "Treasurer of the United States" (See Section 97.6 of the Regulations and Rules of Practice.) Partial applications will be held in the PVPO for not more than 90 days, then returned to the applicant as unfilled. Mail application and other requirements to Plant Variety Protection Office, AMS, USDA, Room 401, NAL Building, 10301 Baltimore Avenue, Beltsville, MD 20705-2351. Retain one copy for your files. All items on the face of the application are self explanatory unless noted below. Corrections on the application form and exhibits must be initialed and dated. **DO NOT** use masking materials to make corrections. If a certificate is allowed, you will be requested to send a check payable to "Treasurer of the United States" in the amount of \$432 for issuance of the certificate. Certificates will be issued to owner, not licensee or agent.

Plant Variety Protection Office

Telephone: (301) 504-5518

FAX: (301) 504-5291

Homepage: <http://www.ams.usda.gov/science/pvpo/pvpindex.htm>

To avoid conflict with other variety names in use, the applicant must check the appropriate recognized authority and provide evidence that name has been cleared by the appropriate recognized authority before the Certificate of Protection is issued. For example, for agricultural and vegetable crops, contact: Seed Branch, AMS, USDA, 10301 Baltimore Avenue, Suite 401 NAL Building, Beltsville, MD 20705. Telephone: (301) 504-5682 <http://www.ams.usda.gov/lsg/seed.htm>.

ITEM

- 19a. Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method; (2) the details of subsequent stages of selection and multiplication; (3) evidence of uniformity and stability; and (4) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified
- 19b. Give a summary of the variety's distinctness. Clearly state how this application variety may be distinguished from all other varieties in the same crop. If the new variety is most similar to one variety or a group of related varieties:
- (1) identify these varieties and state all differences objectively;
 - (2) attach statistical data for characters expressed numerically and demonstrate that these are clear differences; and
 - (3) submit, if helpful, seed and plant specimens or photographs (prints) of seed and plant comparisons which clearly indicate distinctness.
- 19c. Exhibit C forms are available from the PVPO Office for most crops; specify crop kind. Fill in Exhibit C (Objective Description of Variety) form as completely as possible to describe your variety.
- 19d. Optional additional characteristics and/or photographs. Describe any additional characteristics that cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, etc.
- 19e. Section 52(5) of the Act requires applicants to furnish a statement of the basis of the applicant's ownership. An Exhibit E form is available from the PVPO.
20. If "Yes" is specified (*seed of this variety be sold by variety name only, as a class of certified seed*), the applicant **MAY NOT** reverse this affirmative decision after the variety has been sold and so labeled, the decision published, or the certificate issued. However, if "No" has been specified, the applicant may change the choice. (See Regulations and Rules of Practice, Section 97.103).
23. See Sections 41, 42, and 43 of the Act and Section 97.5 of the regulations for eligibility requirements.
24. See Section 55 of the Act for instructions on claiming the benefit of an earlier filing date.

22. CONTINUED FROM FRONT (Please provide a statement as to the limitation and sequence of generations that may be certified.)

23. CONTINUED FROM FRONT (Please provide the date of first sale, disposition, transfer, or use for each country and the circumstances, if the variety (including any harvested material) or a hybrid produced from this variety has been sold, disposed of, transferred, or used in the U.S. or other countries.)

September 5, 2004 seed sold in Colorado, USA

24. CONTINUED FROM FRONT (Please give the country, date of filing or issuance, and assigned reference number, if the variety or any component of the variety is protected by intellectual property right (Plant Breeder's Right or Patent).)

USA, issued 11/29/1994, patent number 5,369,022

NOTES: It is the responsibility of the applicant/owner to keep the PVPO informed of any changes of address or change of ownership or assignment or owner's representative during the life of the application/certificate. The fees for filing a change of address; owner's representative; ownership or assignment; or any modification of owner's name is specified in Section 97.175 of the regulations. (See Section 101 of the Act, and Sections 97.130, 97.131, 97.175(h) of the Regulations and Rules of Practice.)

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 1.4 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, sexual orientation, marital or family status, political beliefs, parental status, or protected genetic information. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call 202-720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.

PVP Application
Bond CL Hard Red Winter Wheat
Exhibit A – Origin and Breeding History of the Variety

Pedigree – Bond CL was selected from the following crosses and backcrosses:

Yumar//TXGH12588-120*4/FS2

Experimental designations – Bond CL was assigned the experimental identification number CO00D007 in 2000. Bond CL has not yet received a PI number from the U.S. National Plant Germplasm System.

Parents – The parents of Bond CL are:

- 1) Yumar – a wheat cultivar developed and released by Colorado State University in 1997. Yumar is designated as PI 605388 in the U.S. National Plant Germplasm System.
- 2) TXGH12588-120 – an unreleased sister selection of the wheat cultivar TAM 110 which was developed and released by the Texas A&M Agricultural Experiment Station in 1997.
- 3) FS2 – a proprietary wheat germplasm line developed by BASF Corporation (formerly American Cyanamid) through induced mutagenesis, with sodium azide and the French wheat cultivar 'Fidel', to obtain tolerance to the imidazolinone class of herbicides. The development of FS2 was described in the following scientific journal article:

Newhouse, K.E., W.A. Smith, M.A. Starrett, T.J. Schaefer, and B.K. Singh. 1992.
 Tolerance to imidazolinone herbicides in wheat. *Plant Physiol.* 100:882-886.

The BC3F2 population with the pedigree TXGH12588-120*4/FS2 was developed at Texas A&M University and provided to Colorado State University in March 1997. Procedures used to develop the BC3F2 population were the same as the procedures used to develop the cultivar Above which was released in 2001 and protected under PVP in 2002.

Breeding method – Bond CL is a doubled-haploid line developed using the wheat x maize (*Zea mays* L.) hybridization method described by Laurie and Bennett in 1988 (Laurie, D.A., and M.D. Bennett. 1988. The production of haploid wheat plants from wheat x maize crosses. *Theor. Appl. Genet.* 76:393-397). Following are the breeding procedures used in the development of Bond CL:

1997 – In March 1997, seeds of the TXGH12588-120*4/FS2 BC3F2 population were germinated on moistened filter paper in petri dishes in the presence of a 50 ppm solution of imazamox herbicide. Seedlings surviving the imazamox treatment were transferred to clean petri dishes with filter paper and vernalized in a cold chamber for 8 weeks at 2-4 °C. Following vernalization, seedlings were hand-transplanted to a summer field nursery in Center, CO, in May 1997. In July 1997, a cross was made in the field between Yumar as female and an herbicide tolerant BC3F2 plant with the pedigree TXGH12588-120*4/FS2. F1 seeds from the cross Yumar//TXGH12588-120*4/FS2 were harvested in early September 1997, vernalized in a cold chamber for 8 weeks at 2-4 °C, and then planted in the greenhouses at Fort Collins, CO, in November 1997. F1 plants from this cross were used for doubled haploid plant generation beginning in spring 1998.

1998 – Wheat florets from F1 plants of the cross Yumar//TXGH12588-120*4/FS2 were emasculated in spring 1998 approximately two to three days before application of fresh maize pollen using a small brush. One day after pollination, spikes were sprayed and injected with a solution containing 25 ppm 2,4-dichlorophenoxyacetic acid (2,4-D) and 75

ppm gibberellic acid (GA_3). Immature embryos were excised from fertilized seeds 12 to 14 days after pollination and placed on modified Gamborg's B5 medium in culture tubes in a growth chamber. Seedlings of regenerated haploid plants were transplanted to soil pots and vernalized as described above. After vernalization, when two to three tillers had developed on each plant, regenerated haploid plants were treated with a 0.1% colchicine solution for chromosome doubling. Seed was harvested from surviving doubled haploid plants in November 1998.

1999 – Seeds harvested from a group of approximately 300 doubled haploid plants from the cross Yumar//TXGH12588-120*4/FS2 were vernalized as described above and increased in the greenhouse during the spring of 1999. Seeds harvested from these plant increases were planted in the field at Fort Collins, CO, as plant rows in September 1999. During the winter of 1999-2000, remnant seed samples from the greenhouse increase were evaluated for resistance to Russian wheat aphid biotype 1 in standard greenhouse seedling screening tests and for herbicide tolerance by germinating 20 seeds in petri dishes in the presence of an aqueous solution ($50 \mu\text{L L}^{-1}$) of imazamox herbicide.

2000 – Plant rows derived from the greenhouse increase of the doubled haploid plants were grown at Fort Collins. Line selections were made in July 2000 based on visual selection for maturity, plant height, straw strength, and overall agronomic adaptation. Seed harvested from selected doubled haploid plant rows was then evaluated for size and color uniformity, near infrared reflectance (NIR) protein content, NIR grain hardness, and sodium dodecyl sedimentation volume. A doubled haploid line designated as CO00D007 was advanced for further testing based on these criteria and the Russian wheat aphid resistance scores from the remnant seed evaluation in winter 1999-2000.

2001 – CO00D007 was grown along with a group of other doubled haploid lines selected from the same cross in a replicated trial at five locations in CO (Akron, Burlington, Fort Collins, Julesburg, Walsh). Grain harvested from the trials in July 2001 was used for end-use quality evaluations in August 2001, including NIR protein content, NIR grain hardness, and mixograph water absorption, mixing time, and mixing tolerance. Data and observations from the field evaluations (grain yield, test weight, plant height, maturity, overall agronomic adaptation) and quality evaluations were used as selection criteria for advancement of CO00D007 for further testing. Concurrent with the yield trials, a bulk seed increase of CO00D007 was grown at Fort Collins, CO, and treated with imazamox herbicide ($44.8 \text{ g a.i. ha}^{-1}$). Seed purification of CO00D007 was initiated by random selection of 400 heads from the increase plot. The head selections were planted as headrows in November 2001 in Yuma, AZ.

2002 – CO00D007 was tested in the replicated Uniform Variety Performance Trial (UVPT) at 10 CO locations (Akron, Bennett, Burlington, Cheyenne Wells, Genoa, Julesburg, Lamar, Orchard, Sheridan Lake, Walsh). Grain harvested from the trials in July 2002 was used for end-use quality evaluations in August 2002, including NIR protein content, NIR grain hardness, and mixograph water absorption, mixing time, and mixing tolerance. Data and observations collected from the field evaluations (yield, test weight, plant height, maturity, overall agronomic adaptation) and quality evaluations were used as selection criteria for advancement of CO00D007 for further testing in state variety trials. The headrows planted in Yuma, AZ, were treated with imazamox herbicide ($44.8 \text{ g a.i. ha}^{-1}$) in spring 2002 and then composited at harvest.

2003 – CO00D007 was tested in the replicated Uniform Variety Performance Trial at the same locations listed above. Grain harvested from the trials in July 2003 was used for small-scale end-use quality evaluations as described above and experimental baking

quality evaluations during winter 2003-2004. Data and observations collected from the field evaluations (yield, test weight, plant height, maturity, overall agronomic adaptation) and quality evaluations were used as selection criteria for advancement of CO00D007 for further testing in state variety trials. Breeder seed of CO00D007 was produced in Yuma, AZ, and treated with imazamox herbicide as described above.

2004 – CO00D007 was tested in the replicated Uniform Variety Performance Trial at the same locations described above and the Irrigated Variety Performance Trial at three locations in Colorado (Fort Collins, Haxtun, Rocky Ford). CO00D007 was also entered in the 2004 USDA-ARS Southern Regional Performance Nursery. A 17-acre Foundation Seed increase was grown under irrigation in Colorado. Based on yield performance, test weight, and end-use quality, CO00D007 was assigned the name Bond CL and released for sale to seed producers in September 2004.

Bond CL is uniform. Variants are limited to: (1) slightly taller plants that occur at a frequency of less than 1 in 1,000 plants; (2) plants with brown glumes that occur at a frequency of less than 1 in 1,000 plants; and (3) plants that are sensitive to imazamox herbicide (e.g., not tolerant to imazamox at the labelled rate of 4-6 fluid ounces per acre) that occur at a frequency of fewer than 40 in 1,000 plants. All other variants in Bond CL are tolerant to imazamox herbicide. The variants in Bond CL as well as the typical plants in Bond CL are commercially acceptable.

Bond CL is stable. When sexually reproduced, Bond CL remains unchanged in its essential and distinctive characteristics. Bond CL was observed to be uniform and stable during the last four generations of seed increase (preliminary seed increase in 2001, head row increase in 2002, Breeder seed increase in 2003, and Foundation seed increase in 2004).

PVP Application
Bond CL Hard Red Winter Wheat
Exhibit B – Statement of Distinctness

Bond CL is most similar to the hard red winter wheat cultivar Above. Both of these cultivars carry the herbicide (imazamox) tolerance gene *Als1*, though they differ in the following characteristics:

- 1) Bond CL is significantly taller than Above under typical field conditions.

The following data are plant height data (in cm) for Bond CL and Above from trials where both cultivars were grown together. Each value represents the average of three replications.

Year	Location	Trial	Above	Bond CL	Difference
2002	Akron	UVPT	58.4	62.7	4.2
2002	Fort Collins	UVPT	66.0	71.1	5.1
2002	Julesburg	UVPT	50.8	51.6	0.8
2003	Akron	AYN IMI	92.7	94.0	1.3
2003	Akron	UVPT	89.7	97.4	7.6
2003	Burlington	AYN IMI	61.8	65.2	3.4
2003	Burlington	UVPT	61.0	63.5	2.5
2003	Cheyenne Wells	UVPT	53.3	66.0	12.7
2003	Fort Collins	AYN IMI	97.4	110.1	12.7
2003	Fort Collins	UVPTFC	91.4	99.1	7.6
2003	Julesburg	AYN IMI	90.2	95.3	5.1
2003	Julesburg	UVPT	88.9	94.8	5.9
2003	Kansas	OUT VT	81.3	85.1	3.8
2003	Orchard	UVPT	63.5	68.6	5.1
2003	Walsh	UVPT	61.0	57.6	-3.4
2004	Akron	UVPT	56.7	61.0	4.2
2004	Bennett	UVPT	58.4	66.0	7.6
2004	Fort Collins	CSU Elite	67.7	60.1	-7.6
2004	Fort Collins	HWW IMI	78.7	87.6	8.9
2004	Fort Collins	UVPT	67.7	69.4	1.7
2004	Julesburg	CSU Elite	53.3	59.7	6.3
2004	Julesburg	UVPT	63.5	69.4	5.9
2004	Nebraska	CSU Elite	48.9	48.9	0.0
2004	Sheridan Lake	UVPT	53.3	58.4	5.1
2004	South Dakota	CSU Elite	48.9	48.9	0.0
2004	Yuma	UVPT	55.9	66.0	10.2
Average			67.7	72.2	4.5

** Significantly different based on a meaningfully paired Student's T Test procedure (T-statistics: t ratio = 5.08; df = 25; P<0.001; upper/lower 95% confidence interval = 2.68 – 6.33 cm).

2) Bond CL has a significantly later heading date than Above under typical field conditions.

The following are days to heading data (in number of days from January 1) for Bond CL and Above from trials where both cultivars were grown together. Each value represents the average of three replications.

Year	Location	Trial	Above	Bond CL	Difference
2002	Akron	UVPT	142.0	142.3	0.3
2002	Fort Collins	UVPT	146.0	148.0	2.0
2003	Akron	AYN IMI	141.7	142.7	1.0
2003	Akron	UVPT	140.0	141.3	1.3
2003	Fort Collins	AYN IMI	147.0	148.0	1.0
2003	Fort Collins	UVPT FC	147.0	147.3	0.3
2003	Oklahoma	OUT VT	66.8	69.8	3.0
2004	Fort Collins	CSU Elite	139.0	140.7	1.7
2004	Fort Collins	HWW IMI	141.0	142.5	1.5
2004	Fort Collins	UVPT	138.7	142.7	4.0
2004	Julesburg	CSU Elite	138.7	142.3	3.7
2004	Julesburg	UVPT	137.7	141.3	3.7
Average			135.5	137.4	2.0

** Significantly different based on a meaningfully paired Student's T Test procedure (T-statistics: t ratio = 5.60; df = 11; P<0.001; upper/lower 95% confidence interval = 1.18 – 2.69 days).

- 3) Bond CL carries the *Dn4* Russian wheat aphid resistance gene while Above lacks the *Dn4* Russian wheat aphid resistance gene.

In standard greenhouse seedling screening tests, Bond CL is resistant to biotype 1 of the Russian wheat aphid (RWA) while Above is susceptible. The following data are Russian wheat aphid biotype 1 reaction data for Bond CL and Above from screening experiments where both cultivars were grown together.

Greenhouse seedling Russian wheat aphid (biotype 1) resistance reaction of Bond CL and Above hard red winter wheats (2002-2004).[†]

Year	Nursery	Above				Bond CL			
		Number Plants	Rating [‡]	Resistant Plants	% Resistant	Number Plants	Rating [‡]	Resistant Plants	% Resistant
2002	UVPT-1	11	4	0	0	11	2	11	100
2002	UVPT-2	11	5	0	0	10	1	10	100
2003	AYN IMI-1	8	5	0	0	11	2	11	100
2003	AYN IMI-2	10	5	0	0	9	2	8	89
2003	UVPT1	11	5	0	0	10	2	10	100
2003	UVPT2	9	5	0	0	11	2	11	100
2004	CSU Elite-1	11	5	0	0	11	2	11	100
2004	CSU Elite-2	11	5	0	0	11	2	11	100
Average		5		0		2		99	

[†] Greenhouse seedling screening procedures based on Nkongolo, K.K., J.S. Quick, F.B. Peairs, and W.L. Meyer. 1991. Inheritance of resistance of PI 372129 wheat to the Russian wheat aphid. *Crop Sci.* 31:905-907.

[‡] Resistance rating scale (1=very resistant; 2=resistant; 3=moderately resistant; 4=susceptible; 5=very susceptible) based on visual appraisal of resistance reaction that includes severity of leaf rolling, chlorosis, stunting, and eventually death.

Note: Observation of susceptible plants within a RWA-resistant line or cultivar is not necessarily indicative of impurity of RWA resistance. Environmental conditions are known to affect expressivity (and thus penetrance) of the *Dn4* RWA resistance gene in standard greenhouse seedling screening tests.

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U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MD 20705

Exhibit C

OBJECTIVE DESCRIPTION OF VARIETY
Wheat (*Triticum* spp.)

NAME OF APPLICANT (S) Colorado wheat Research FND	TEMPORARY OR EXPERIMENTAL DESIGNATION CO 000007	VARIETY NAME BOND CL
ADDRESS (Street and No., or RD No., City, State, Zip Code and Country) Colorado wheat Research Foundation 7100 South Clinton Street, Suite 120 Centennial, CO 80112 USA		FOR OFFICIAL USE ONLY PVPO NUMBER 200500339

PLEASE READ ALL INSTRUCTIONS CAREFULLY:

Place the appropriate number that describes the varietal character of this variety in the boxes below. Place a zero in the first box (e.g., or) when number is either 99 or less or 9 or less respectively. Data for quantitative plant characters should be based on a minimum of 100 plants. Comparative data should be determined from varieties entered in the same trial. Royal Horticultural Society or any recognized color standard may be used to determine plant colors; designate system used: _____ Please answer all questions for your variety; lack of response may delay progress of your application.

1. KIND:

- 1 = Common
2 = Durum
3 = Club
4 = Other (Specify) _____

2. VERNALIZATION:

- 1 = Spring
2 = Winter
3 = Other (Specify) _____

3. COLEOPTILE ANTHOCYANIN:

- 1 = Absent 2 = Present

4. JUVENILE PLANT GROWTH:

- 1 = Prostrate 2 = Semi-erect 3 = Erect

5. PLANT COLOR: (boot stage)

- 1 = Yellow-Green
2 = Green
3 = Blue-Green

6. FLAG LEAF: (boot stage)

- 1 = Erect 2 = Recurved

- 1 = Not Twisted 2 = Twisted

- 1 = Wax Absent 2 = Wax Present

7. EAR EMERGENCE:

Number of Days (Average)

From January 1
Yuma

Number of Days Earlier Than

Same As

Number of Days Later Than

Above

*Relative to a PVPO-Approved Commercial Variety Grown in the Same Trial

8. ANTHOR COLOR:

- 1 = Yellow 2 = Purple

9. PLANT HEIGHT: (from soil to top of head, excluding awns)

069

cm (Average)

03

cm Taller Than

Yumar, Above

Same As

TAM III

05

cm Shorter Than

Powers 99

200500339

10. STEM:

A. ANTHOCYANIN

1

1 = Absent 2 = Present

D. INTERNODE

1

1 = Hollow 2 = Semi-solid 3 = Solid

5

Number of Nodes

B. WAXY BLOOM

2

1 = Absent 2 = Present

E. PEDUNCLE

1

1 = Erect 2 = Recurved 3 = Semi-erect

20

cm Length

C. HAIRINESS (last internode of rachis)

1

1 = Absent 2 = Present

F. AURICLE

1

Anthocyanin: 1 = Absent 2 = Present

1

Hair: 1 = Absent 2 = Present

11. HEAD: (At Maturity)

A. DENSITY

2

1 = Lax
2 = Middense (Laxidense)
3 = Dense

C. CURVATURE

2

1 = Erect
2 = Inclined
3 = Recurved

B. SHAPE

1

1 = Tapering
2 = Strap
3 = Clavate
4 = Other (Specify) _____

D. AWNEDNESS

4

1 = Awnless
2 = Apically Awnletted
3 = Awnletted
4 = Awned

12. GLUMES: (At Maturity)

A. COLOR

1

1 = White
2 = Tan
3 = Other (Specify) _____

E. BEAK WIDTH

1

1 = Narrow
2 = Medium
3 = Wide

B. SHOULDER

2

1 = Wanting 2 = Oblique
3 = Rounded 4 = Square
5 = Elevated 6 = Apiculate
7 = Other (Specify) _____

F. GLUME LENGTH

2

1 = Short (ca. 7mm)
2 = Medium (ca. 8mm)
3 = Long (ca. 9mm)

C. SHOULDER WIDTH

1

1 = Narrow
2 = Medium
3 = Wide

G. WIDTH

2

1 = Narrow (ca. 3mm)
2 = Medium (ca. 3.5mm)
3 = Long (ca. 4mm)

D. BEAK

3

1 = Obtuse
2 = Acute
3 = Acuminate

13. SEED:

A. SHAPE

- ☒ 1 = Ovate
☐ 2 = Oval
☐ 3 = Elliptical

B. CHEEK

- ☒ 1 = Rounded
☐ 2 = Angular

C. BRUSH

- ☒ 1 = Short
☐ 2 = Medium
☐ 3 = Long
- ☒ 1 = Not Collared
☐ 2 = Collared

D. CREASE

- ☒ 1 = Width 60% or less of Kernel
☐ 2 = Width 80% or less of Kernel
☐ 3 = Width Nearly as Wide as Kernel

- ☒ 1 = Depth 20% or less of Kernel
☐ 2 = Depth 35% or less of Kernel
☐ 3 = Depth 50% or less of Kernel

E. COLOR

- ☒ 1 = White
☐ 2 = Amber
☐ 3 = Red
☐ 4 = Other (Specify) _____

F. TEXTURE

- ☒ 1 = Hard
☐ 2 = Soft
☐ 3 = Other (Specify) _____

G. PHENOL REACTION (See Instructions)

- ☒ 1 = Ivory
☐ 2 = Fawn
☐ 3 = Light Brown
☐ 4 = Dark Brown
☐ 5 = Black

H. SEED WEIGHT

- ☒ 28 g/1000 Seed (Whole number only)

I. GERM SIZE

- ☒ 1 = Small
☐ 2 = Midsize
☐ 3 = Large

14. DISEASE: PLEASE INDICATE THE SPECIFIC RACE OR STRAIN TESTED

(0 = Not Tested 1 = Susceptible 2 = Resistant 3 = Intermediate 4 = Tolerant)

- | | |
|---|---|
| <input checked="" type="checkbox"/> 3 Stern Rust (<i>Puccinia graminis</i> f. sp. <i>tritici</i>) | <input checked="" type="checkbox"/> 3 Leaf Rust (<i>Puccinia recondita</i> f. sp. <i>tritici</i>) |
| <input checked="" type="checkbox"/> 1 Stripe Rust (<i>Puccinia striiformis</i>) | <input type="checkbox"/> 0 Loose Smut (<i>Ustilago tritici</i>) |
| <input type="checkbox"/> 0 Tan Spot (<i>Pyrenophora tritici-repentis</i>) | <input type="checkbox"/> 0 Flag Smut (<i>Urocystis agropyri</i>) |
| <input type="checkbox"/> 0 Halo Spot (<i>Selenophoma donacis</i>) | <input type="checkbox"/> 0 Common Bunt (<i>Tilletia tritici</i> or <i>T. laevis</i>) |
| <input type="checkbox"/> 0 Septoria nodorum (Glume Blotch) | <input type="checkbox"/> 0 Dwarf Bunt (<i>Tilletia controversa</i>) |
| <input type="checkbox"/> 0 Septoria avenae (Speckled Leaf Disease) | <input type="checkbox"/> 0 Karnal Bunt (<i>Tilletia indica</i>) |
| <input type="checkbox"/> 0 Septoria tritici (Speckled Leaf Blotch) | <input type="checkbox"/> 0 Powdery Mildew (<i>Erysiphe graminis</i> f. sp. <i>tritici</i>) |
| <input type="checkbox"/> 0 Scab (<i>Fusarium</i> spp.) | <input type="checkbox"/> 0 "Snow Molds" |
| <input type="checkbox"/> 0 "Black Point" (Kernel Smudge) | <input type="checkbox"/> 0 Common Root Rot (<i>Fusarium</i> , <i>Cochliobolus</i> and <i>Bipolaris</i> spp.) |
| <input type="checkbox"/> 0 Barley Yellow Dwarf Virus (BYDV) | <input type="checkbox"/> 0 Rhizoctonia Root Rot (<i>Rhizoctonia solani</i>) |
| <input type="checkbox"/> 0 Soilborne Mosaic Virus (SBMV) | <input type="checkbox"/> 0 Black Chaff (<i>Xanthomonas campestris</i> pv. <i>translucens</i>) |
| <input type="checkbox"/> 0 Wheat Yellow (Spindle Streak) Mosaic Virus | <input type="checkbox"/> 0 Bacterial Leaf Blight (<i>Pseudomonas syringae</i> pv. <i>syringae</i>) |
| <input checked="" type="checkbox"/> 3 Wheat Streak Mosaic Virus (WSMV) | <input type="checkbox"/> Other (Specify) _____ |
| <input type="checkbox"/> Other (Specify) _____ | <input type="checkbox"/> Other (Specify) _____ |
| <input type="checkbox"/> Other (Specify) _____ | <input type="checkbox"/> Other (Specify) _____ |
| <input type="checkbox"/> Other (Specify) _____ | <input type="checkbox"/> Other (Specify) _____ |

15. INSECT: (0 = Not Tested 1 = Susceptible 2 = Resistant 3 = Intermediate 4 = Tolerant)

PLEASE SPECIFY BIOTYPE (where needed)

- ☒ 1 Hessian Fly (*Mayetiola destructor*) **Great Plains Biotype**
- ☐ 0 Stem Sawfly (*Cephus* spp.)
- ☐ 0 Cereal Leaf Beetle (*Oulema melanopa*)
- ☐ Other (Specify) _____
- ☐ Other (Specify) _____
- ☐ Other (Specify) _____

15. INSECT: (continued) 0 = Not Tested 1 = Susceptible 2 = Resistant 3 = Intermediate 4 = Tolerant

PLEASE SPECIFY BIOTYPE (Where Needed)

☒ Russian Aphid (*Diuraphis noxia*) *Biotype 1*☒ Greenbug (*Schizaphis graminum*) *E*☐ Aphids☐ Other (Specify) _____☐ Other (Specify) _____☐ Other (Specify) _____

200500339

16. ADDITIONAL INFORMATION ON ANY ITEM ABOVE, OR GENERAL COMMENTS:

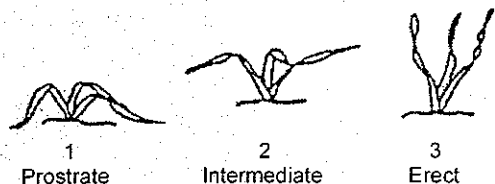
For Russian wheat aphid, biotype 1 is the new designation for the original, North American biotype.

WHEAT DESCRIPTOR ILLUSTRATIONS

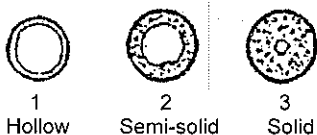
200500339

Section Numbers Correspond to the Numbers of the Sections on the Form

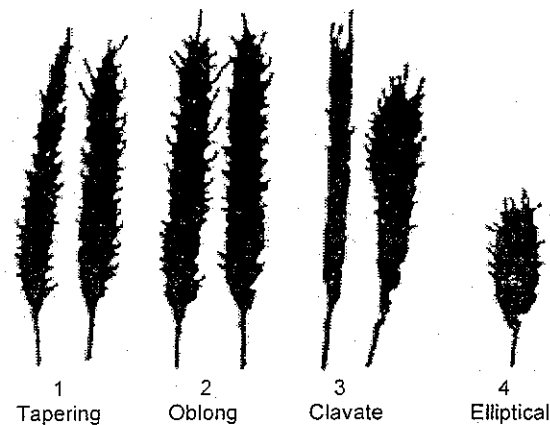
4. EARLY PLANT GROWTH HABIT:



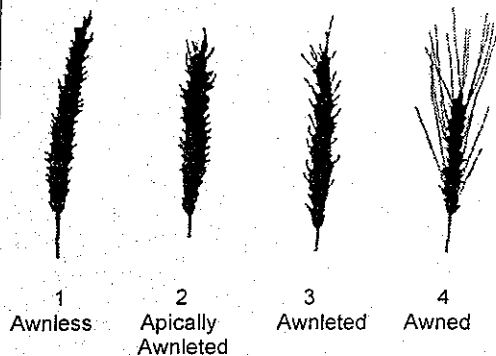
10. STEM INTERNODE X-SECTION:



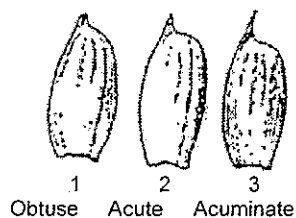
11. SPIKE SHAPE:



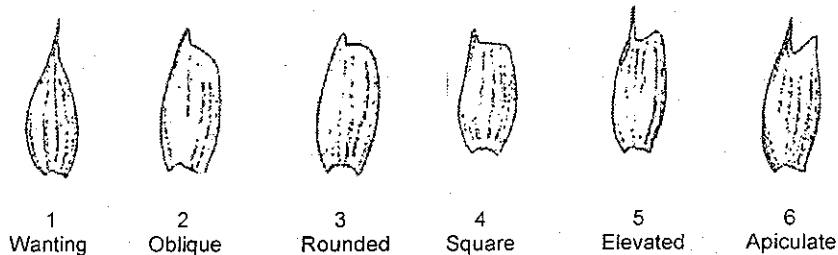
11. AWNEDNESS:



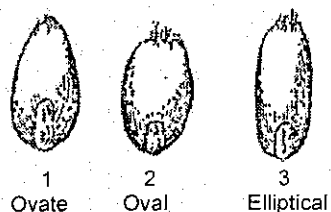
12. BEAK SHAPE:



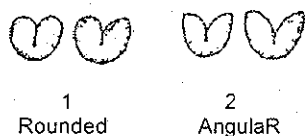
12. SHOULDER SHAPE:



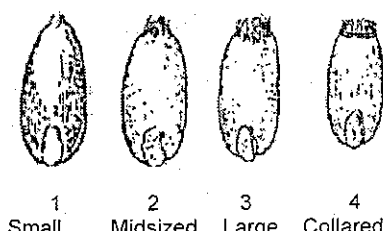
13. SEED SHAPE:



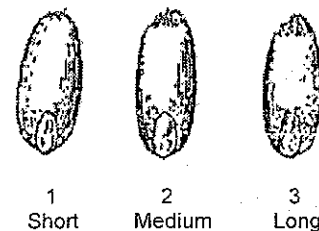
13. CHEEK SHAPE:



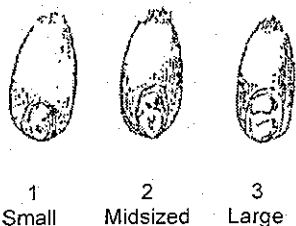
13. BRUSH SIZE



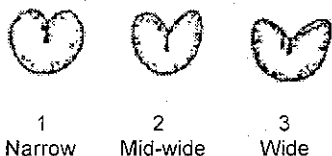
13. BRUSH HAIR LENGTH:



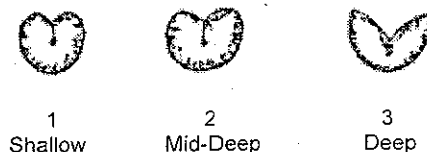
13. GERM (EMBRYO) SIZE:



13. SEED CREASE WIDTH:



13. SEED CREASE DEPTH:



PVP Application**Bond CL Hard Red Winter Wheat****Exhibit D – Additional Description of the Variety (optional)**

The following additional descriptive information is presented:

- 1) Table 1: Agronomic data summary from the 2002-2004 Dryland Colorado Variety Performance Trials (UVPT).
- 2) Table 2: Grain yield and test weight for Bond CL and other entries tested in Dryland Colorado Variety Performance Trials (UVPT; 2002 to 2004).
- 3) Table 3: Grain yield and test weight for Bond CL and other entries tested in Colorado Irrigated Variety Performance Trial (IVPT, 2004).
- 4) Table 4: Grain yield for Bond CL and other entries tested in High Plains dryland locations of the 2004 Southern Regional Performance Nursery (SRPN).
- 5) Table 5: Comparison of milling and bread baking characteristics of Bond CL and the check cultivar Above in composite milling and baking tests (2001, 2002).

Table 1. Agronomic data summary from the 2002-2004 Dryland Colorado Variety Performance Trials (UVPT). **Bond CL and other herbicide tolerant entries are bolded.**

	Heading Date	Plant Height	Straw Strength	Coleoptile Length	Shattering Score
	--- days [†] ---	--- in ---	score [‡]	--- mm ---	score [§]
Bond CL	141.7	27.3	4.3	78.5	3.6
AP502 CL	139.7	25.9	2.3	88.1	4.2
Above	139.9	25.5	2.3	86.5	4.3
Prairie Red	140.2	25.6	2.0	82.1	4.1
Stanton	143.3	27.2	2.0	76.4	4.1
Jagalene	143.4	25.6	2.0	78.0	6.7
Ankor	143.8	26.3	2.7	77.9	2.7
Yumar	143.9	25.9	2.0	62.9	4.8
Avalanche	144.4	26.3	2.0	73.4	4.8
Yuma	144.6	25.6	2.0	59.2	4.8
TAM 111	144.8	27.3	2.0	87.0	4.5
Trego	145.4	24.6	2.0	76.8	4.3
Observations	3	10	1	6	3

[†] Days from January 1.

[‡] 1=fully erect to 9=completely flat scale.

[§] 1=minimal shatter to 9=severely shattered scale.

Table 2. Grain yield and test weight for Bond CL and other entries tested in Dryland Colorado Variety Performance Trials (UVPT; 2002 to 2004). **Bond CL and other herbicide tolerant entries are bolded.**

Entry	Grain Yield			Multiple Year Averages		
				Grain Yield		Test Wt
	2002	2003	2004	2003-04	2002-04	2002-04
	bu/a					lb/bu
Above	34.5	52.8	51.4	52.2	48.4	58.2
TAM 111	35.0	52.6	50.2	51.6	48.0	59.1
Bond CL	31.3	55.2	48.4	52.1	47.7	57.3
Trego	34.3	52.9	47.7	50.5	47.0	60.2
Jagalene	35.7	46.6	54.1	50.0	46.9	59.4
Ankor	33.7	51.8	48.3	50.2	46.7	58.2
Avalanche	31.6	50.4	50.6	50.5	46.5	59.7
Yuma	30.0	53.0	48.4	50.9	46.4	58.2
Stanton	32.6	49.4	50.4	49.8	46.2	59.1
Prairie Red	34.6	50.2	48.0	49.2	46.1	58.2
Yumar	30.8	50.3	48.7	49.6	45.6	58.6
AP502 CL	32.7	48.9	48.6	48.8	45.3	57.7
Lakin	33.9	47.8	49.0	48.4	45.3	58.8
Alliance	32.5	50.5	46.4	48.6	45.2	58.2
Akron	33.2	49.6	46.7	48.3	45.1	58.2
Jagger	31.7	46.0	47.3	46.6	43.4	58.2
Halt	34.7	46.7	41.9	44.5	42.4	58.0
Prowers 99	31.8	45.4	42.2	43.9	41.3	59.4
Thunderbolt	30.8	39.6	43.0	41.1	38.9	59.7
Average	32.9	49.6	47.8	48.8	45.4	58.6
Locations	3	6	5	11	14	14

Table 3. Grain yield and test weight for Bond CL and other entries tested in Colorado Irrigated Variety Performance Trial (IVPT, 2004).

Entry	Haxtun		Rocky Ford	Average	
	Yield	Lodging [†]	Yield	Yield	Test Weight
Yuma	133.5	1.7	95.8	114.6	56.7
Bond CL	130.7	4.0	95.0	112.9	56.4
Ankor	120.6	5.0	97.3	108.9	56.6
Prairie Red	109.1	2.0	106.0	107.6	56.1
Ok102	112.3	1.3	99.9	106.1	58.5
NuHills	103.8	1.7	102.1	102.9	56.9
Overley	119.7	4.3	85.6	102.7	57.5
NuFrontier	111.7	2.3	92.2	101.9	56.8
Dumas	113.8	1.0	88.2	101.0	58.1
Jagalene	119.9	1.7	81.5	100.7	58.0
Antelope	121.5	2.0	79.6	100.6	55.9
Nuplains	110.6	1.3	89.1	99.9	57.8
NuHorizon	121.6	1.0	77.4	99.5	58.3
Wesley	113.8	1.0	83.3	98.6	56.5
Platte	107.8	1.0	77.2	92.5	57.1
Average	115.8	2.9	89.7	102.8	57.0

[†] 1=fully erect to 9=completely flat scale.

Table 4. Grain yield for Bond CL and other entries tested in High Plains dryland locations of the 2004 Southern Regional Performance Nursery (SRPN). **Bond CL and checks are bolded.**

ENTRY/ID	Colby	Hays	G City	Julesburg	Akron	Average
8 G980143	51.8	60.4	41.6	43.1	57.6	50.9
27 CO980607	51.5	59.4	38.1	43.2	60.8	50.6
35 TX00D1390	48.0	64.9	43.3	42.9	49.9	49.8
45 KS01HW152-6	47.9	71.2	47.1	40.9	39.8	49.4
32 TX00V1117	43.5	68.0	38.0	38.0	58.5	49.2
26 CO970547-7	49.3	62.0	49.7	39.0	45.5	49.1
7 G991324	46.5	62.6	39.1	41.8	55.0	49.0
5 G990191	54.4	64.2	36.6	39.8	47.7	48.6
29 CO00016	47.3	64.3	44.9	42.6	43.6	48.5
44 W03-20	48.9	63.0	40.4	41.2	47.8	48.2
28 Bond CL	42.9	62.2	37.2	43.0	54.1	47.9
30 CO00698	42.7	64.3	35.3	44.8	50.2	47.5
41 W99-194	44.9	63.9	38.0	38.6	51.1	47.3
47 KS02HW34	46.6	60.9	41.6	38.0	49.1	47.2
37 NE00403	41.5	61.6	36.2	44.5	51.3	47.0
24 KS00F5-20-3	47.5	61.8	38.2	42.4	41.5	46.3
31 TX96D1073	46.1	62.9	33.6	38.7	47.6	45.8
3 TAM 107	49.2	55.2	39.1	40.0	45.2	45.7
39 NE01481	42.1	59.3	41.0	35.4	50.4	45.7
19 OK00514	47.4	62.9	34.4	36.6	45.7	45.4
22 KS950811-5-1	43.9	64.7	32.9	40.9	44.1	45.3
14 T136	50.8	52.0	40.8	39.1	43.6	45.3
4 Trego	50.4	60.2	40.9	34.7	39.2	45.1
15 T140	46.6	53.9	39.6	40.9	44.2	45.0
40 NE00564	42.4	51.9	42.1	38.7	47.8	44.6
34 TX01D3232	44.2	63.5	33.4	38.1	42.8	44.4
23 KS00F5-14-7	44.5	61.0	34.2	36.6	45.6	44.4
11 AP01T3131	46.2	53.1	36.8	39.2	46.1	44.3
36 TX01A5936	44.5	64.9	32.5	41.9	36.7	44.1
46 KS01HW163-4	49.3	56.0	32.9	37.3	43.0	43.7
12 NW99L7068	48.1	58.3	35.3	38.9	37.5	43.6
48 SD97W604	40.6	56.5	36.4	36.8	45.9	43.3
50 NW98S097	44.3	50.8	34.5	29.4	55.2	42.8
42 W96x1311-01	45.5	60.6	28.9	36.7	42.4	42.8
43 W98-159-7	39.1	57.5	34.8	38.3	43.8	42.7
20 OK99212	47.3	49.9	39.2	36.0	40.4	42.6
18 OK00618W	41.2	54.8	35.8	35.9	44.3	42.4
38 NE00435	42.3	54.8	35.5	39.5	39.0	42.2
13 T135	46.0	53.9	35.6	34.0	41.4	42.2
10 AP01T1114	44.2	50.7	33.4	33.4	45.7	41.5
2 Scout 66	38.6	51.7	33.6	40.0	42.7	41.3
25 KS00F5-57-8	43.4	53.4	29.6	35.1	45.1	41.3
49 CO991132	42.7	52.2	31.3	35.9	42.8	41.0
9 AP01T1112	45.0	46.0	29.7	35.8	48.2	40.9
21 OK00614	41.5	51.7	35.3	36.1	38.6	40.6
6 G982238-2	42.1	59.8	34.4	30.1	36.7	40.6
33 TX00V1131	42.1	52.7	30.1	26.0	48.6	39.9
17 OK00611W	38.8	52.0	28.6	36.9	30.0	37.3
16 T141	37.5	44.7	31.7	28.8	37.8	36.1
1 Kharkof	29.8	40.8	30.0	30.2	40.7	34.3
Mean	44.9	57.8	36.5	37.9	45.4	
LSD 0.05	7.0	6.9	6.7	6.4	7.2	
CV	9.6	7.3	11.2	10.3	9.7	

Table 5. Comparison of milling and bread baking characteristics of Bond CL and the check cultivar Above in composite milling and baking tests (2001, 2002).

Cultivar	Bond CL	Above
Test weight (kg hL ⁻¹)	71.9	73.5
Kernel weight (mg kernel ⁻¹)	23.5	27.9
Flour yield (g kg ⁻¹)	653	653
Flour protein content (g kg ⁻¹)	122	123
Flour ash content (g kg ⁻¹)	4.2	4.3
Water absorption (g kg ⁻¹)	615	600
Mixograph mix time (minutes)	3.6	2.7
Mixograph tolerance (score) ^z	4.0	1.0
Loaf volume (L)	.92	.93
Crumb grain (score) ^z	4.4	2.8

^z Mixograph tolerance and crumb grain score scale: 0, unacceptable to 6, excellent.

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). The information is held confidential until the certificate is issued (7 U.S.C. 2426).

EXHIBIT E
STATEMENT OF THE BASIS OF OWNERSHIP

1. NAME OF APPLICANT(S) <i>Colorado Wheat Research Foundation</i>	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER <i>CO 000007</i>	3. VARIETY NAME <i>BOND CL</i>
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP, and Country) <i>7100 South Clinton Street Suite 120 Centennial, CO 80112</i>	5. TELEPHONE (Include area code) <i>303-721-3300</i>	6. FAX (Include area code) <i>303-721-7555</i>
7. PVPO NUMBER <i>200500339</i>		

8. Does the applicant own all rights to the variety? Mark an "X" in the appropriate block. If no, please explain.

☒ YES ☐ NO

9. Is the applicant (individual or company) a U.S. national or a U.S. based company? If no, give name of country.

☒ YES ☐ NO

10. Is the applicant the original owner?

☐ YES☒ NOIf no, please answer one of the following:

a. If the original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. National(s)?

☐ YES☐ NO

If no, give name of country

b. If the original rights to variety were owned by a company(ies), is (are) the original owner(s) a U.S. based company?

☒ YES☐ NO

If no, give name of country

11. Additional explanation on ownership (Trace ownership from original breeder to current owner. Use the reverse for extra space if needed):

The cultivar BOND CL was developed at Colorado State University by a team led by Dr. Scott Haley, an employee at CSU. By agreement between Dr. Haley and CSU, all rights to all wheat cultivars developed by him while employed at CSU are assigned to CSU. Ownership of BOND CL has been transferred from CSU to the Colorado Wheat Research Foundation, Inc. (address above)

PLEASE NOTE:

Plant variety protection can only be afforded to the owners (not licensees) who meet the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.
2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.
3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed the final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definitions.

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 0.1 hour per response, including the time for reviewing the instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

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To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, D.C. 20250-9410 or call (202) 720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.